



# STIC Search Report

## Biotech-Chem Library

STIC Database Tracking Number: 97396

TO: Ralph J Gitomer  
Location: m 11B01; r 11D11  
Art Unit: 1651  
Tuesday, June 24, 2003

Case Serial Number: 09/763018

From: Barb O'Bryen  
Location: Biotech-Chem Library  
CM1-6A05  
Phone: 308-4291

barbara.obryen@uspto.gov

### Search Notes

Ralph,  
I also searched Biosis, FROSTI (foodline: food science and technology), and FSTA (food science and technology abstracts), but didn't find anything useful there, so they don't show up in the search history.  
Barb

6/5/2003

09/763,018

The priority date is 8/19/1998. I have a reference for the device. The invention is for testing animal feed that has enzymes added to it to improve digestibility; testing for uniformity of distribution of the enzymes, or testing activity of the enzymes. Testing is done in the field. Xylanase is a preferred enzyme tested for, also shown are glucanase and cellulase. Feeds are in pulverulent form or granulated form.

Ralph







# STIC SEARCH RESULTS FEEDBACK FORM

## Biotech-Chem Library

Questions about the scope or the results of the search? Contact *the searcher* or *contact*:

Mary Hale, Information Branch Supervisor  
308-4258, CM1-1E01

## Voluntary Results Feedback Form

➤ I am an examiner in Workgroup:  Example: 1610

➤ Relevant prior art **found**, search results used as follows:

- ☐ 102 rejection
- ☐ 103 rejection
- ☐ Cited as being of interest.
- ☐ Helped examiner better understand the invention.
- ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature  
(journal articles, conference proceedings, new product announcements etc.)

➤ Relevant prior art **not found**:

- ☐ Results verified the lack of relevant prior art (helped determine patentability).
- ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Drop off or send completed forms to STIC/Biotech-Chem Library CM1 – Circ. Desk





=> fil capl

FILE 'CAPLUS' ENTERED AT 14:40:33 ON 24 JUN 2003

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FILE COVERS 1907 - 24 Jun 2003 VOL 138 ISS 26

FILE LAST UPDATED: 23 Jun 2003 (20030623/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d que 115; d que 136; d que 141

L4 3 SEA FILE=REGISTRY ABB=ON XYLANASE/CN  
L5 1 SEA FILE=REGISTRY ABB=ON GLUCANASE/CN  
L6 1 SEA FILE=REGISTRY ABB=ON CELLULASE/CN  
L7 4887 SEA FILE=CAPLUS ABB=ON L4  
L8 379 SEA FILE=CAPLUS ABB=ON L5  
L9 13412 SEA FILE=CAPLUS ABB=ON L6  
L11 3992 SEA FILE=CAPLUS ABB=ON FEED ANALYSIS/CT  
L12 7190 SEA FILE=CAPLUS ABB=ON ENZYMES/CT (L) (ANALYSIS OR ANT/RL)  
L13 310 SEA FILE=CAPLUS ABB=ON ((L7 OR L8 OR L9)) (L) ANT/RL  
L15 16 SEA FILE=CAPLUS ABB=ON (L12 OR L13) AND L11

Role ANT =  
analyte

L4 3 SEA FILE=REGISTRY ABB=ON XYLANASE/CN  
L5 1 SEA FILE=REGISTRY ABB=ON GLUCANASE/CN  
L6 1 SEA FILE=REGISTRY ABB=ON CELLULASE/CN  
L7 4887 SEA FILE=CAPLUS ABB=ON L4  
L8 379 SEA FILE=CAPLUS ABB=ON L5  
L9 13412 SEA FILE=CAPLUS ABB=ON L6  
L10 23953 SEA FILE=CAPLUS ABB=ON FOOD ANALYSIS/CT  
L11 3992 SEA FILE=CAPLUS ABB=ON FEED ANALYSIS/CT  
L12 7190 SEA FILE=CAPLUS ABB=ON ENZYMES/CT (L) (ANALYSIS OR ANT/RL)  
L13 310 SEA FILE=CAPLUS ABB=ON ((L7 OR L8 OR L9)) (L) ANT/RL  
L14 211 SEA FILE=CAPLUS ABB=ON (L12 OR L13) AND (L10 OR L11)  
L20 53201 SEA FILE=CAPLUS ABB=ON PULVERULEN? OR GRANULAT?  
L36 0 SEA FILE=CAPLUS ABB=ON L14 AND L20

L4 3 SEA FILE=REGISTRY ABB=ON XYLANASE/CN  
L5 1 SEA FILE=REGISTRY ABB=ON GLUCANASE/CN  
L6 1 SEA FILE=REGISTRY ABB=ON CELLULASE/CN  
L7 4887 SEA FILE=CAPLUS ABB=ON L4  
L8 379 SEA FILE=CAPLUS ABB=ON L5  
L9 13412 SEA FILE=CAPLUS ABB=ON L6  
L10 23953 SEA FILE=CAPLUS ABB=ON FOOD ANALYSIS/CT  
L11 3992 SEA FILE=CAPLUS ABB=ON FEED ANALYSIS/CT

Searched by Barb O'Bryen, STIC 308-4291

L12 7190 SEA FILE=CAPLUS ABB=ON ENZYMES/CT (L) (ANALYSIS OR ANT/RL)  
L13 310 SEA FILE=CAPLUS ABB=ON ((L7 OR L8 OR L9)) (L) ANT/RL  
L14 211 SEA FILE=CAPLUS ABB=ON (L12 OR L13) AND (L10 OR L11)  
L41 4 SEA FILE=CAPLUS ABB=ON L14 AND (SOLIDS/CT OR PELLET? OR SOLID F!!D#)

=> s l15 or l41

L153 19 L15 OR L41

=> fil agricola

FILE 'AGRICOLA' ENTERED AT 14:40:35 ON 24 JUN 2003

FILE COVERS 1970 TO 10 Jun 2003 (20030610/ED)

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reserved. (2003)

This file contains CAS Registry Numbers for easy and accurate  
substance identification.

=> d que 175; d que 179; d que 189

L67 42671 SEA FILE=AGRICOLA ABB=ON ENZYME ACTIVITY/CT  
L68 1011 SEA FILE=AGRICOLA ABB=ON FEED EVALUATION/CT  
L69 4806 SEA FILE=AGRICOLA ABB=ON FEEDS/CT  
L71 15805 SEA FILE=AGRICOLA ABB=ON R300/CC = *Feed composition*  
L75 3 SEA FILE=AGRICOLA ABB=ON L67 AND (L69 OR L71) AND L68

L67 42671 SEA FILE=AGRICOLA ABB=ON ENZYME ACTIVITY/CT  
L69 4806 SEA FILE=AGRICOLA ABB=ON FEEDS/CT  
L71 15805 SEA FILE=AGRICOLA ABB=ON R300/CC  
L74 5623 SEA FILE=AGRICOLA ABB=ON XYLANASE# OR GLUCANASE# OR CELLULASE#

L76 43 SEA FILE=AGRICOLA ABB=ON L67 AND (L69 OR L71) AND L74  
L77 8122 SEA FILE=AGRICOLA ABB=ON DETECTION/CT  
L78 5114 SEA FILE=AGRICOLA ABB=ON ANALYTICAL METHODS/CT  
L79 3 SEA FILE=AGRICOLA ABB=ON L76 AND (L77 OR L78)

L67 42671 SEA FILE=AGRICOLA ABB=ON ENZYME ACTIVITY/CT  
L68 1011 SEA FILE=AGRICOLA ABB=ON FEED EVALUATION/CT  
L69 4806 SEA FILE=AGRICOLA ABB=ON FEEDS/CT  
L71 15805 SEA FILE=AGRICOLA ABB=ON R300/CC  
L82 3804 SEA FILE=AGRICOLA ABB=ON PELLET?  
L83 152 SEA FILE=AGRICOLA ABB=ON PULVERULEN?  
L84 1308 SEA FILE=AGRICOLA ABB=ON GRANULAT?  
L85 538 SEA FILE=AGRICOLA ABB=ON SOLID F!!D#  
L87 1993 SEA FILE=AGRICOLA ABB=ON ASSAYS/CT  
L88 734 SEA FILE=AGRICOLA ABB=ON QUANTITATIVE TECHNIQUES/CT  
L89 1 SEA FILE=AGRICOLA ABB=ON L67 AND (L68 OR L69 OR L71) AND (L82  
OR L83 OR L84 OR L85) AND (L87 OR L88)

=> s 175 or 179 or 189

L154 6 L75 OR L79 OR L89

=> fil caba

FILE 'CABA' ENTERED AT 14:40:37 ON 24 JUN 2003  
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FILE COVERS 1973 TO 6 Jun 2003 (20030606/ED)

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substance identification.

=> d que 193; d que 1103; d que 1114

L90 40238 SEA FILE=CABA ABB=ON ENZYME ACTIVITY/CT  
L91 344 SEA FILE=CABA ABB=ON FEED EVALUATION/CT  
L93 0 SEA FILE=CABA ABB=ON L90 AND L91

L91 344 SEA FILE=CABA ABB=ON FEED EVALUATION/CT  
L97 1604 SEA FILE=CABA ABB=ON XYLANASE  
L98 2102 SEA FILE=CABA ABB=ON GLUCANASE#  
L99 2126 SEA FILE=CABA ABB=ON CELLULASE/CT  
L100 15692 SEA FILE=CABA ABB=ON ACTIVITY/CT  
L101 1263 SEA FILE=CABA ABB=ON ENZYME PREPARATIONS/CT  
L102 113 SEA FILE=CABA ABB=ON (L101 OR (L97 OR L98 OR L99)) AND L100  
L103 0 SEA FILE=CABA ABB=ON L91 AND L102

L90 40238 SEA FILE=CABA ABB=ON ENZYME ACTIVITY/CT  
L92 24917 SEA FILE=CABA ABB=ON FEEDS/CT  
L97 1604 SEA FILE=CABA ABB=ON XYLANASE  
L98 2102 SEA FILE=CABA ABB=ON GLUCANASE#  
L99 2126 SEA FILE=CABA ABB=ON CELLULASE/CT  
L100 15692 SEA FILE=CABA ABB=ON ACTIVITY/CT  
L101 1263 SEA FILE=CABA ABB=ON ENZYME PREPARATIONS/CT  
L102 113 SEA FILE=CABA ABB=ON (L101 OR (L97 OR L98 OR L99)) AND L100  
L104 37596 SEA FILE=CABA ABB=ON RR300/CC = *Feed composition & quality*  
L105 145 SEA FILE=CABA ABB=ON L104 AND (L102 OR L90)  
L109 67525 SEA FILE=CABA ABB=ON ANALYTICAL METHODS/CT OR ASSAYS/CT OR  
CHEMICAL ANALYSIS/CT OR DETERMINATION/CT OR QUANTITATIVE  
ANALYSIS/CT  
L113 446 SEA FILE=CABA ABB=ON ENZYMES/CT AND L92  
L114 4 SEA FILE=CABA ABB=ON L105 AND L109 AND L113

=> fil wpids; d que 1150

FILE 'WPIDS' ENTERED AT 14:40:38 ON 24 JUN 2003  
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FILE LAST UPDATED: 19 JUN 2003 <20030619/UP>  
MOST RECENT DERWENT UPDATE: 200339 <200339/DW>  
DERWENT WORLD PATENTS INDEX SUBSCRIBER FILE, COVERS 1963 TO DATE

>>> NEW WEEKLY SDI FREQUENCY AVAILABLE --> see NEWS <<<

>>> PATENT IMAGES AVAILABLE FOR PRINT AND DISPLAY <<<

>>> FOR DETAILS OF THE PATENTS COVERED IN CURRENT UPDATES,

Searched by Barb O'Bryen, STIC 308-4291

SEE <http://www.derwent.com/dwpi/updates/dwpicov/index.html> <<<

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|      |        |                       |   |
|------|--------|-----------------------|---|
| L44  | 170625 | SEA FILE=WPIDS ABB=ON | FOOD#   |
| L45  | 447708 | SEA FILE=WPIDS ABB=ON | FEED#   |
| L46  | 65104  | SEA FILE=WPIDS ABB=ON | ENZYME#   |
| L47  | 685    | SEA FILE=WPIDS ABB=ON | GLUCANASE#  |
| L48  | 654    | SEA FILE=WPIDS ABB=ON | XYLANASE#   |
| L49  | 2654   | SEA FILE=WPIDS ABB=ON | CELLULASE#  |
| L51  | 60580  | SEA FILE=WPIDS ABB=ON | SOLIDS OR SOLID F!ID#                                       |
| L52  | 36782  | SEA FILE=WPIDS ABB=ON | PELLET?   |
| L53  | 2097   | SEA FILE=WPIDS ABB=ON | PULVERULENT?  |
| L54  | 39822  | SEA FILE=WPIDS ABB=ON | GRANULAT?   |
| L62  | 782680 | SEA FILE=WPIDS ABB=ON | MEASUR? OR QUANTIF? OR ANALY?                               |
| L149 | 65     | SEA FILE=WPIDS ABB=ON | L62 (5A) ((L46 OR L47 OR L48 OR L49)) (10A)<br>(L44 OR L45) |
| L150 | 1      | SEA FILE=WPIDS ABB=ON | (L51 OR L52 OR L53 OR L54) AND L149                         |

=> dup rem l154,l114,l153,l150  
FILE 'AGRICOLA' ENTERED AT 14:41:01 ON 24 JUN 2003

FILE 'CABA' ENTERED AT 14:41:01 ON 24 JUN 2003  
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PROCESSING COMPLETED FOR L154  
PROCESSING COMPLETED FOR L114  
PROCESSING COMPLETED FOR L153  
PROCESSING COMPLETED FOR L150  
L155 28 DUP REM L154 L114 L153 L150 (2 DUPLICATES REMOVED)  
ANSWERS '1-6' FROM FILE AGRICOLA  
ANSWERS '7-10' FROM FILE CABA  
ANSWERS '11-28' FROM FILE CAPLUS

=> d ibib ab hitrn 1-28; fil hom

L155 ANSWER 1 OF 28 AGRICOLA Compiled and distributed by the National  
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(2003)

ACCESSION NUMBER: 2002:18743 AGRICOLA  
DOCUMENT NUMBER: IND23253862  
TITLE: Technical note: methods for detecting liquid enzyme  
additives added to animal feeds.  
AUTHOR(S): Wallace, R.J.; Hartnell, G.F.  
AVAILABILITY: DNAL (49 J82)  
SOURCE: Journal of animal science, Oct 2001. Vol. 79, No. 10.  
p. 2731-2735



Publisher: Savoy, IL : American Society of Animal Science.

CODEN: JANSAG; ISSN: 0021-8812

Includes references

Illinois; United States

Article

U.S. Imprints not USDA, Experiment or Extension

English

NOTE:

PUB. COUNTRY:

DOCUMENT TYPE:

FILE SEGMENT:

LANGUAGE:

AB Methods for detecting and measuring the quantity of fibrolytic enzyme preparations added to feeds were investigated by enzymatic and tracer methods. Enzyme preparations added to corn silage, rye-grass silage, and a total mixed ration containing both silages and a concentrate could not be detected using their enzymatic activities. Glycosidase activities of solubles washed from the feed were more than an order of magnitude greater than glycosidases in the added enzymes. Carboxymethylcellulase and **xylanase** activity determinations, using reducing sugar release as the measurement, were subject to interference from reducing sugars present in the feed. A fluorescent tracer method, using fluorescein added at a rate of 1 g/L of feed enzymes, or 2 g/t of feed, was developed that enabled sensitive detection of liquid enzyme additions to feeds.

L155 ANSWER 2 OF 28 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved.  
(2003)

ACCESSION NUMBER:

2001:1690 AGRICOLA

DOCUMENT NUMBER:

IND22079877

TITLE:

Solubilization and degradation of ribulose-1,5-bisphosphate carboxylase/oxygenase (EC 4.1.1.39; Rubisco) protein from white clover (*Trifolium repens*) and *Lotus corniculatus* by rumen microorganisms and the effect of condensed tannins on these processes.

AUTHOR(S):

SOURCE:

Min, B.R.; McNabb, W.C.; Barry, T.N.; Peters, J.S.  
The Journal of agricultural science, May 2000. Vol. 134, No. pt.3. p. 305-317

Publisher: Cambridge : Cambridge University Press.

CODEN: JASIAB; ISSN: 0021-8596

Includes references

England; United Kingdom

Article

Non-U.S. Imprint other than FAO

English

NOTE:

PUB. COUNTRY:

DOCUMENT TYPE:

FILE SEGMENT:

LANGUAGE:

AB In situ and in vitro rumen incubations were used to determine the effect of condensed tannins (CT) on the solubilization and degradation of the plant protein from white clover (*Trifolium repens*) and *Lotus corniculatus*. These forages contained, respectively 0.3 and 22.1 g CT/kg dry matter (DM). The sheep used for the experiments were also fed either white clover or *L. corniculatus*. Effects of CT were determined by making measurements in the presence and absence of polyethylene glycol (PEG; molecular weight 3500), which binds and inactivates CT. The loss of DM, neutral detergent fibre (NDF), total nitrogen (N) and Rubisco (ribulose-1,5-bisphosphate carboxylase/oxygenase; EC 4.1.1.39; fraction I leaf protein) from polyester bags suspended in the rumen of sheep was measured. The loss of these constituents from polyester bags suspended in the rumen was used as a measurement of their solubilization. Degradation was defined as the disappearance of Rubisco from white clover and *L. corniculatus* added to in vitro incubations with rumen fluid obtained from the same fistulated sheep fed either white clover or *L. corniculatus*. In the absence of PEG, the in situ loss of Rubisco from *L. corniculatus* was less rapid than the loss of this protein from white clover when each forage was incubated in the rumen of sheep fed the same diet. Addition of PEG tended to increase the loss of Rubisco from *L. corniculatus*, suggesting that CT slowed the rates of solubilization of Rubisco from this forage. Effects of rumen fluid were

small, but there was some evidence that the rumen fluid in sheep fed *L. corniculatus* reduced the solubilization of Rubisco from white clover. The action of CT did not inhibit the in situ loss of NDF from either white clover or *L. corniculatus*. In the absence of PEG, the in vitro degradation of Rubisco from *L. corniculatus* was slower when compared to the degradation of this protein from white clover; PEG addition increased the degradation of Rubisco from *L. corniculatus*, but not from white clover, showing that CT was the causal agent. The addition of CT extracted from *L. corniculatus* markedly depressed the degradation of Rubisco from white clover, with the effect being completely reversible by PEG. The large subunit (LSU) of Rubisco was consistently degraded at a faster rate than the small subunit (SSU) and added CT had a greater effect in slowing the degradation of the LSU compared to the SSU. There was little difference in the degradation of Rubisco when rumen fluid from sheep fed either white clover or *L. corniculatus* was used for in vitro incubations. It was concluded that the action of CT from *L. corniculatus* reduces the digestion of protein in the rumen of sheep. This effect is predominantly due to the action of CT reducing the degradation of plant protein, although CT also reduced the solubilization of plant protein. The main effects of CT on protein solubilization and degradation seemed to be produced locally by CT present in plant tissue; transfer of these effects through rumen fluid was small in magnitude.

X  
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(2003)

ACCESSION NUMBER: 95:33040 AGRICOLA  
DOCUMENT NUMBER: IND20460764  
TITLE: Technical note: detection and quantification of supplemental fungal beta-glucanase activity in animal feed.  
AUTHOR(S): Walsh, G.A.; Murphy, R.A.; Killeen, G.F.; Headon, D.R.; Power, R.F.  
CORPORATE SOURCE: Alltech's European Biosciences Research Centre, Galway, Ireland.  
AVAILABILITY: DNAL (49 J82)  
SOURCE: Journal of animal science, Apr 1995. Vol. 73, No. 4. p. 1074-1076  
Publisher: Champaign, Ill. : American Society of Animal Science.  
CODEN: JANSAG; ISSN: 0021-8812  
NOTE: Includes references  
PUB. COUNTRY: Illinois; United States  
DOCUMENT TYPE: Article  
FILE SEGMENT: U.S. Imprints not USDA, Experiment or Extension  
LANGUAGE: English

AB Selected hydrolytic enzymes are added to animal feeds in order to degrade specific antinutritional factors and(or) to increase availability of certain components of feedstuffs to the animal. A method is described that allows detection and quantification of beta-glucanase activity in complex feedstuffs. The method is based on radial diffusion of an enzyme-containing feed extract through an agar gel in which lichenan substrate (a relatively inexpensive glucan of mixed beta 1 to 4 and beta 1 to 3 linkages) has been dissolved. A linear relationship between the diameter of the zone of substrate hydrolyzed and the log of enzyme activity present was observed. The assay described is technically straightforward and requires no specialized equipment. At typical commercial inclusion levels (1 kg/t), the activity of a supplemental beta-glucanase, added to feed in a commercial mill was determined by averaging several measurements, with a precision of +/- 4%, variation between individual readings of +/- 11.3% (SD), and recovery of 109%. By using high-concentration feed extracts, the method was sensitive enough to

detect background and(or) supplemental beta-glucanase activities as low as .05 kg/t supplement equivalent. This method allows consumers, producers, and regulatory authorities to measure the activity of beta-glucanase in feed at commercial inclusion levels and, hence, study the effects of processes such as **pelleting** and extrusion on such supplements.

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ACCESSION NUMBER: 97:12179 AGRICOLA  
DOCUMENT NUMBER: IND20546727  
TITLE: An in vitro procedure for studying enzymic dephosphorylation of phytate in maize-soyabean feeds for turkey poults.  
AUTHOR(S): Zyla, K.; Ledoux, D.R.; Garcia, A.; Veum, T.L.  
CORPORATE SOURCE: University of Agriculture, Krakow, Poland.  
SOURCE: The British journal of nutrition, July 1995. Vol. 74, No. 1. p. 3-17  
Publisher: Cambridge [England] : Cambridge University Press ; Chicago, Ill. : Agent for U.S.A., The University of Chicago Press, 1947-  
CODEN: BJNUAV; ISSN: 0007-1145  
NOTE: Includes references  
PUB. COUNTRY: England; United Kingdom  
DOCUMENT TYPE: Article  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English

AB An in vitro method was developed to predict inorganic P release from maize soyabean poultry feeds containing supplemental phytase (EC 3.1.3.8), and to quantify the effect of acid phosphatase (EC 3.1.3.2), fungal protease (EC 3.4.23.6) and *Aspergillus niger* **cellulase** (EC 3.2.1.4) on phytate dephosphorylation. Pepsin (EC 3.4.23.1) and pancreatin digestion periods were preceded by a 30 min pre-incubation at pH 5.25 to simulate digestion in the crop of poultry. Pancreatin digestion was carried out in dialysis tubing, with a ratio of about 1:25 (v/v) between the digesta and dialysing medium, to simulate gradient absorption from the duodenum. The feed:water ratio was kept within physiological limits and a constant proportion of feed weight to digestive enzymes was maintained. There was a linear response to increasing dosages of phytase up to 1000 phytase units (FTU)/kg feed, and to increasing phosphate concentration in feeds. In vivo validation was performed with growing turkeys (1-3 weeks) fed on diets containing 12 g Ca/kg and 0,500 or 1000 FTU phytase/kg in a factorial arrangement with 0, 1, 2 or 3 g supplemental phosphate/kg (from KH<sub>2</sub>PO<sub>4</sub>). After a simple transformation (variable/in vitro P = f(in vitro P)), amounts of P hydrolysed from feed samples by in vitro digestions correlated with 3-week body-weight gain (R 0.986, P < 0.0001), toe ash (R 0.952, P < 0.0001), feed intake (R 0.994, P < 0.0001) and feed efficiency (R 0.992, P < 0.0001). The dephosphorylating ability of phytase in vitro was significantly enhanced (P < 0.05) by the addition of acid phosphatase. Fungal acid protease and *Aspergillus niger* **cellulase** also enhanced the dephosphorylation process in vitro.

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ACCESSION NUMBER: 89:105359 AGRICOLA  
DOCUMENT NUMBER: IND89058867  
TITLE: Quality of alfalfa herbage estimated by a prepared cellulase solution and near infrared reflectance spectroscopy.  
AUTHOR(S): Bughrara, S.S.; Sleper, D.A.; Belyea, R.L.; Marten,

Searched by Barb O'Bryen, STIC 308-4291

CORPORATE SOURCE: G.C.  
Missouri Agricultural Experiment Station, University  
of Missouri, Columbia, MO  
AVAILABILITY: DNAL (450 C16)  
SOURCE: Canadian journal of plant science = Revue canadienne  
de phytotechnie, July 1989. Vol. 69, No. 3. p. 833-839  
Publisher: Ottawa : Agricultural Institute of Canada.  
CODEN: CPLSAY; ISSN: 0008-4220  
NOTE: Includes references.  
DOCUMENT TYPE: Article  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English  
SUMMARY LANGUAGE: French

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ACCESSION NUMBER: 86:72419 AGRICOLA  
DOCUMENT NUMBER: ADL86056526  
TITLE: The use of an enzymatic technique to predict  
digestibility, metabolizable and net energy of  
compound feedstuffs for ruminants.  
AUTHOR(S): De Boever, J.L.; Cottyn, B.G.; Buysse, F.X.; Wainman,  
F.W.; Vanacker, J.M.  
AVAILABILITY: DNAL (SF95.A55)  
SOURCE: Animal feed science and technology, May 1986. Vol. 14,  
No. 3/4. p. 203-214  
Publisher: Amsterdam : Elsevier.  
CODEN: AFSTDH; ISSN: 0377-8401  
NOTE: Includes references.  
DOCUMENT TYPE: Article  
FILE SEGMENT: Non-U.S. Imprint other than FAO  
LANGUAGE: English

X L155 ANSWER 7 OF 28 CABA COPYRIGHT 2003 CABI DUPLICATE 2  
ACCESSION NUMBER: 97:51730 CABA  
DOCUMENT NUMBER: 971403190  
TITLE: Viscometric determination of beta -glucanase  
and endoxylanase activity in feed  
AUTHOR: Engelen, A. J.; Heeft, F. C. van der; Randsdorp, P.  
H. G.; Van der Heeft, F. C.  
CORPORATE SOURCE: Gist-brocades B.V., Intercompany Service Laboratory,  
PO Box 1, 2600 MA Delft, Netherlands.  
SOURCE: Journal of AOAC International, (1996) Vol. 79, No.  
5, pp. 1019-1025. 2 ref.  
ISSN: 1060-3271  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB A method is described for viscometric estimation of beta -  
**glucanase** and endoxylanase activities in feed samples. The method  
is based on estimation of the decrease in viscosity as a result of  
hydrolysis of glycosidic bonds in beta -glucan and xylan at pH 3.5. This  
method does not require a blank sample (feed without enzyme addition), and  
it does not need standard addition for reliable quantitation.

L155 ANSWER 8 OF 28 CABA COPYRIGHT 2003 CABI  
ACCESSION NUMBER: 1999:149437 CABA  
DOCUMENT NUMBER: 991413576  
TITLE: Application of proteolytic enzymes for determining  
the rate of ruminal protein degradation of feeds  
Zastosowanie enzymow proteolitycznych do okreslania  
tempa degradacji bialka pasz w zwaczu

AUTHOR: Kosmala, I.  
CORPORATE SOURCE: Instytut Zootechniki, ul. Sarego 2, 31-047 Krakow, Poland.  
SOURCE: Roczniki Naukowe Zootechniki, (1999) Vol. 26, No. 1, pp. 111-124. 25 ref.  
ISSN: 0137-1657

DOCUMENT TYPE: Journal  
LANGUAGE: Polish  
SUMMARY LANGUAGE: English; German; Russian

AB The rate of rumen protein degradation of feeds was determined using the proteinases, ficin, protease and pancreatin. Degradation was measured in concentrate feeds varying in CP content from 9.98 (maize) to 40.72% (guar meal), and in lucerne forage (27.65%). During the first 2 h of enzyme activity, protein was found to degrade rapidly. After deducting these values from the amount of buffer-soluble protein, mean values of protein degradation for all the feeds were 2.73%/h for incubation with ficin, 6.48%/h with protease, and 5.55%/h with pancreatin. The rate of protein degradation became stable as incubation time increased. Protein degradation was minimal between 24 and 48 h of incubation. For this reason, the amount of protein degraded during 1 h in the time interval of 2 to 24 h of incubation with enzyme was used to determine the mean rate of protein degradation. In all feeds, the rate of protein degradation in the 2 to 24 h interval was 0.72% protein/h for the incubation with ficin and protease and 1.12% protein/h for the incubation with pancreatin.

L155 ANSWER 9 OF 28 CABA COPYRIGHT 2003 CABI

ACCESSION NUMBER: 2000:83260 CABA  
DOCUMENT NUMBER: 20001412284  
TITLE: Study on the suitable conditions of enzymatic reactivity for determination of the disappearance of sample crude protein in vitro by dialysis tube method  
AUTHOR: Huang RuiLin; Li TieJun; Tan ZhiLiang; Xing TingXian; Huang, R. L.; Li, T. J.; TAN, Z. L.; Xing, T. X.  
CORPORATE SOURCE: Changsha Institute of Agricultural Modernization, Chinese Academy of Sciences, Changsha 410125, Hunan, China.  
SOURCE: Acta Zoonutrimenta Sinica, (1999) Vol. 11, No. 4, pp. 51-58. 9 ref.  
DOCUMENT TYPE: Journal  
LANGUAGE: Chinese  
SUMMARY LANGUAGE: English

L155 ANSWER 10 OF 28 CABA COPYRIGHT 2003 CABI

ACCESSION NUMBER: 97:90218 CABA  
DOCUMENT NUMBER: 971406712  
TITLE: Assay of enzyme activity in feeds  
AUTHOR: Heil, K.  
CORPORATE SOURCE: Hoechst Veterinar GmbH, Frankfurt am Main, Germany.  
SOURCE: Zootechnica International, (1997) Vol. 20, No. 3, pp. 40-43.  
ISSN: 0392-0593  
DOCUMENT TYPE: Journal  
LANGUAGE: English

AB The steps involved in a feed enzyme assay, the requirements of such methods and their validation are discussed briefly.

L155 ANSWER 11 OF 28 CAPLUS COPYRIGHT 2003 ACS

DUPLICATE 1

ACCESSION NUMBER: 2000:144992 CAPLUS  
DOCUMENT NUMBER: 132:207205  
TITLE: Fast measuring device of enzymatic activity  
INVENTOR(S): Roberts, Neil; Moores, Janet

Searched by Barb O'Bryen, STIC 308-4291

PATENT ASSIGNEE(S): Rhone-Poulenc Animal Nutrition S.A., Fr.  
SOURCE: PCT Int. Appl., 16 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO.  | DATE     |
|------------------------|--|----------|------------------|----------|
| WO 2000011136          | A1   | 20000302 | WO 1999-FR1990   | 19990816 |
| W:                     | AE, AL, AU, BA, BB, BG, BR, CA, CN, CU, CZ, EE, GD, GE, HR, HU, ID, IL, IN, IS, JP, KP, KR, LC, LK, LR, LT, LV, MG, MK, MN, MX, NO, NZ, PL, RO, RU, SG, SI, SK, SL, TR, TT, UA, US, UZ, VN, YU, ZA, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                  |          |
| RW:                    | GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                  |          |
| CA 2341581             | AA   | 20000302 | CA 1999-2341581  | 19990816 |
| AU 9951727             | A1   | 20000314 | AU 1999-51727    | 19990816 |
| AU 752174              | B2   | 20020905 |                  |          |
| EP 1105456             | A1   | 20010613 | EP 1999-936736   | 19990816 |
| R:                     | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI   |          |                  |          |
| BR 9914294             | A  | 20011106 | BR 1999-14294    | 19990816 |
| JP 2002523038          | T2   | 20020730 | JP 2000-566393   | 19990816 |
| PRIORITY APPLN. INFO.: |  |          | FR 1998-10533 A  | 19980819 |
|                        |  |          | WO 1999-FR1990 W | 19990816 |

AB The invention concerns a device for the fast measurement of enzymic activity in a **solid food** comprising (1) a container for receiving the sample to be tested; (2) a reagent particular to the enzyme whereof the activity is to be measured; and (3) a buffer for placing the enzyme in soln.

IT 37278-89-0, Rovabio xylanase TRLC  
RL: **ANT (Analyte)**; ANST (Analytical study).  
(fast measuring device for enzymic activity in food)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 12 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:849773 CAPLUS  
DOCUMENT NUMBER: 137:334875  
TITLE: Multichamber device and uses thereof for processing of biological samples  
INVENTOR(S): Schumacher, Richard T.; Tao, Feng; Lawrence, Nathan P.; Kakita, Allan; Manak, Mark M.; Laugharn, James A., Jr.  
PATENT ASSIGNEE(S): Boston Biomedica, Inc., USA  
SOURCE: PCT Int. Appl., 74 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.    | KIND  | DATE     | APPLICATION NO. | DATE     |
|---------------|---|----------|-----------------|----------|
| WO 2002088296 | A1  | 20021107 | WO 2002-US13187 | 20020426 |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, |          |                 |          |

UA, UG, US, UZ, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU,  
TJ, TM  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH,  
CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
US 2002197631 A1 20021226 US 2002-134054 20020426  
PRIORITY APPLN. INFO.: US 2001-286509P P 20010426  
US 2001-308869P P 20010730  
US 2001-337336P P 20011108  
AB Devices and methods are described for homogenization, processing,  
detection, and anal. of biol. samples such as insects, fungi, bacteria,  
and plant and animal tissues. Multiple chambers in these devices permit  
different processing functions to be carried out at each stage, such that  
the resulting homogenized product can be further processed, purified,  
analyzed, and/or biomols. such as metabolites, proteins and nucleic acids,  
or pharmaceutical products can be detected. The device can be used in a  
hydrostatic pressure app., in which different activities, i.e.  
incubations, addn. or renewal of reagent, and generation and detection of  
signal can be carried out in the appropriate chamber. The method improves  
the preservation of biomols. from chem. and enzymic degrading relative to  
conventional means. Addnl., this method enables automated sample prepn.  
and anal. processes. Genomic DNA and proteins were extd. from rat brain  
samples using a pressure cycling device.  
REFERENCE COUNT: 1 THERE ARE 1 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 13 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 2002:10722 CAPLUS  
DOCUMENT NUMBER: 136:66625  
TITLE: Synthesis and use of chromogens for food preservation  
analysis  
INVENTOR(S): Ribic, Hans  
PATENT ASSIGNEE(S): Segen Industries, Inc., USA  
SOURCE: PCT Int. Appl., 64 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 3  
PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO.   | DATE     |
|------------------------|--|----------|-------------------|----------|
| WO 2002000920          | A2   | 20020103 | WO 2001-US20260   | 20010625 |
| WO 2002000920          | A3   | 20021017 |                   |          |
| W:                     | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |          |                   |          |
| RW:                    | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG   |          |                   |          |
| EP 1297333             | A2   | 20030402 | EP 2001-950471    | 20010625 |
| R:                     | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |          |                   |          |
| PRIORITY APPLN. INFO.: |  |          | US 2000-602001 A  | 20000623 |
|                        |  |          | WO 2001-US20260 W | 20010625 |
| AB                     | The invention concerns providing a method for the labeling of food to ensure its freshness. This may be done with ingestible compns. comprising a chromic change agent, methods of making and using them and their potential applications are provided. The chromic change agent alternatively may be assocd. with the ingestible, such as a packaging                     |          |                   |          |

material for the ingestible. In response to a triggering event, phys. or chem., the chromic change agent changes color to provide information as to the history of the ingestible, either prior or contemporaneous with use. Depending on the use, the color change agent may be reversible or irreversible. Various solid or liq. ingestible compns. are provided for detg. ingestible temp., storage temp., user temp., light exposure, pH change, hydration or solvation change, mech. stress, and the like, particularly in comestibles. Of particular interest are polydiacetylene polymers that may be formulated to provide compns. having numerous different color transition triggering mechanisms. The invention is also related to other chromic change agents that may be incorporated into ingestibles.

L155 ANSWER 14 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:663563 CAPLUS

DOCUMENT NUMBER: 137:324347

TITLE: Determination of xylanase, .beta.-glucanase, and cellulase activity

AUTHOR(S): Koenig, Joachim; Grasser, Roland; Pikor, Heather; Vogel, Kurt

CORPORATE SOURCE: Roche Vitamins Ltd, Basel, 4070, Switz.

SOURCE: Analytical and Bioanalytical Chemistry (2002), 374(1), 80-87

CODEN: ABCNBP; ISSN: 1618-2642

PUBLISHER: Springer-Verlag

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A simple, robust and highly reproducible method for the detn. of xylanase, .beta.-glucanase, and cellulase in com. feed enzyme preps. is described. The method is based on measurement of reducing moieties released by the enzymes from arabinoxylan, .beta.-glucan, or CM-cellulose (CMC) and is independent of enzyme stds.

IT 9012-54-8, Cellulase 37278-89-0, Xylanase

RL: ANT (Analyte); ANST (Analytical study)

(xylanase, .beta.-glucanase, and cellulase activity detd. in feed enzyme preps. based on reducing moieties)

REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 15 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:47209 CAPLUS

DOCUMENT NUMBER: 136:385078

TITLE: Process stability and methods of detection of feed enzymes in complete diets

AUTHOR(S): Bedford, M. R.; Silversides, F. G.; Cowan, W. D.

CORPORATE SOURCE: Finnfeeds, Wiltshire, SN8 1XN, UK

SOURCE: Enzymes in Farm Animal Nutrition (2001), 377-387.  
Editor(s): Bedford, Michael R.; Partridge, Gary G.  
CABI Publishing: Wallingford, UK.

CODEN: 69CEXE; ISBN: 0-85199-393-1

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A review. The topics include major classes of enzymes used in animal feeds, differences in enzymes resistance to thermal denaturation in vitro and during feed processing, feed anal. problems due to feed matrix interaction, data on enzymes behavior during feed processing, and future trends. The main enzymes considered are phytase, .beta.-glucanase, and xylanase. Several approaches are suggested to decrease the neg. effects of feed heat treatment, including protecting the enzymes from steam penetration, using heat-resistant enzymes, or simply adding the enzymes in a liq. form after feed processing. Common feed processing temps. cannot be increased indefinitely because of the damage to vitamins, proteins and starch, which may be even more susceptible to heat damage than exogenous



feed enzyme additives.

IT 37278-89-0; Xylanase

RL: ANT (Analyte); FFD (Food or feed use); ANST (Analytical study); BIOL (Biological study); USES (Uses)

(feed enzyme additives in complete diets, their stability during feed processing and feed anal. issues)

REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 16 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 2002:47198 CAPLUS

DOCUMENT NUMBER: 136:385074

TITLE: Analysis of feed enzymes

AUTHOR(S): McCleary, B. V.

CORPORATE SOURCE: Megazyme International Ireland Limited, Bray, Ire..

SOURCE: Enzymes in Farm Animal Nutrition (2001), 85-107.

Editor(s): Bedford, Michael R.; Partridge, Gary G.

CABI Publishing: Wallingford, UK.

CODEN: 69CEXE; ISBN: 0-85199-393-1

DOCUMENT TYPE: Conference; General Review

LANGUAGE: English

AB A review discussing procedures for .beta.-glucanase, .beta.-xylanase, .alpha.-amylase, .alpha.-galactosidase, phytase, and proteinase used as feed enzymes.

REFERENCE COUNT: 33 THERE ARE 33 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 17 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:799704 CAPLUS

DOCUMENT NUMBER: 132:321044

TITLE: Quantitative analysis of pyroglutamic acid in peptides. [Erratum to document cited in CA131:213274]

AUTHOR(S): Suzuki, Yoshio; Motoi, Hirofumi; Sato, Kenji

CORPORATE SOURCE: Nisshin Flour Milling Company Limited, Ohi-machi

Iruma-gun Saitama, 356-8511, Japan

SOURCE: Journal of Agricultural and Food Chemistry (1999), 47(12), 5297

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB Under HPLC App. and Procedure, anion-exchange should be cation-exchange. In Fig. 3, LH-RH is represented by circles and bombesin by triangles. Under Anal. of Bioactive Peptides, Tsunashima should be Tsunasawa, as should be the ref. given under Literature Cited. Under Anal. of Industrially Prepd. Wheat Gluten Hydrolyzate, the correct gluten hydrolyzate content is 0.486 mmol/g. The correct page range for the Tsunasawa et al. (1998) ref. is 778-783.

L155 ANSWER 18 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:431076 CAPLUS

DOCUMENT NUMBER: 131:213274

TITLE: Quantitative Analysis of Pyroglutamic Acid in Peptides

AUTHOR(S): Suzuki, Yoshio; Motoi, Hirofumi; Sato, Kenji

CORPORATE SOURCE: Nisshin Flour Milling Company Limited, Ohi-machi

Iruma-gun Saitama, 356-8511, Japan

SOURCE: Journal of Agricultural and Food Chemistry (1999), 47(8), 3248-3251

CODEN: JAFCAU; ISSN: 0021-8561

PUBLISHER: American Chemical Society

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A simplified and rapid procedure for the detn. of pyroglutamic acid in

peptides was developed. The method involves the enzymic cleavage of an N-terminal pyroglutamate residue using a thermostable pyroglutamate aminopeptidase and isocratic HPLC sepn. of the resulting enzymic hydrolyzate using a column switching technique. Pyroglutamate aminopeptidase from a thermophilic archaebacteria, *Pyrococcus furiosus*, cleaves N-terminal pyroglutamic acid residue independent of the mol. wt. of the substrate. It cleaves more than 85% of pyroglutamate from peptides whose mol. wt. ranges from 362.4 to 4599.4 Da. Thus, a new method is presented that quant. ests. N-terminal pyroglutamic acid residue in peptides.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 19 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1999:97108 CAPLUS

DOCUMENT NUMBER: 131:55576

TITLE: Enzymic assays for xylanase and .beta.-glucanase feed enzymes

AUTHOR(S): Cosson, T.; Perez Vendrel, A. M.; Gonzalez Teresa, B.; Rene, D.; Taillade, P.; Brufau, J.

CORPORATE SOURCE: Lesaffre Developpement, Marcq-en-Baroeul, 59700, Fr.

SOURCE: Animal Feed Science and Technology (1999), 77(3-4), 345-353

CODEN: AFSTDH; ISSN: 0377-8401

PUBLISHER: Elsevier Science B.V.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The anal. of pure enzyme activities is well documented but few data have been published about the comparison of results between several labs. When the enzymes are mixed to an animal feed the dosage is difficult due to different interactions with the feed elements and to the diln. level. Here, the results of the comparison of xylanase and .beta.-glucanase assays of pure enzymes in 3 labs. are disclosed. They show a good repeatability for both methods (CV = 7.2 and 7.0%, resp., for xylanase and .beta.-glucanase activities) and a reproducibility equal to the one listed in the literature (16.6 and 19.3%, resp.). As the enzymes have been introduced in a feed, the methods were adapted to cope up with the restraints linked to the feed elements. In-feed methods are described for xylanase and .beta.-glucanase activities that allow a monitoring of the active enzyme. They can be used for inclusion as well as for dispersal controls.

IT 37278-89-0, Xylanase

RL: ANT (Analyte); ANST (Analytical study)

(enzymic assays for xylanase and .beta.-glucanase in animal feed)

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 20 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1998:721463 CAPLUS

DOCUMENT NUMBER: 129:313096

TITLE: Device and apparatus for the simultaneous detection of multiple analytes

INVENTOR(S): Fitzgerald, Stephen Peter; Lamont, John Victor;

McConnell, Robert Ivan; Benchikh, El Ouard

PATENT ASSIGNEE(S): Radox Laboratories Ltd., UK

SOURCE: Eur. Pat. Appl., 26 pp.

CODEN: EPXXDW

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO. KIND DATE APPLICATION NO. DATE

Searched by Barb O'Bryen, STIC 308-4291

|   |    |          |                 |             |
|---|----|----------|-----------------|-------------|
| EP 874242   | A1 | 19981028 | EP 1998-303019  | 19980420    |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO |    |          |                 |             |
| BR 9800655  | A  | 19990810 | BR 1998-655     | 19980417    |
| CA 2235183  | AA | 19981021 | CA 1998-2235183 | 19980420    |
| AU 9861988  | A1 | 19981022 | AU 1998-61988   | 19980420    |
| AU 713388   | B2 | 19991202 |                 |             |
| NO 9801766  | A  | 19981022 | NO 1998-1766    | 19980420    |
| GB 2324866  | A1 | 19981104 | GB 1998-8309    | 19980420    |
| GB 2324866  | B2 | 20011114 |                 |             |
| RU 2168174  | C2 | 20010527 | RU 1998-107571  | 19980420    |
| SG 87765  | A1 | 20020416 | SG 1998-759     | 19980420    |
| JP 10319011   | A2 | 19981204 | JP 1998-110687  | 19980421    |
| ZA 9803345  | A  | 19990421 | ZA 1998-3345    | 19980421    |
| CN 1215167  | A  | 19990428 | CN 1998-115254  | 19980421    |
| HK 1012202  | A1 | 20020517 | HK 1998-113653  | 19981216    |
| US 6498010  | B1 | 20021224 | US 1999-413799  | 19991007    |
| PRIORITY APPLN. INFO.:  |    |          | EP 1997-302707  | A 19970421  |
|   |    |          | US 1998-61171   | A3 19980416 |

AB A solid state device for performing multi-analyte assays, comprises a substrate and a multiplicity of discrete reaction sites each bearing a ligand covalently bonded to the substrate, wherein the surface of the substrate between the reaction sites is inert with respect to analyte. Such a device may be obtained by a process of activating the surface of the substrate, and applying an array of ligands on to discrete areas on the surface.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L155 ANSWER 21 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1997:432007 CAPLUS

DOCUMENT NUMBER: 127:94269

TITLE: Collaborative evaluation of a simplified assay for total starch in cereal products (AACC Method 76-13)  
 McCleary, B. V.; Gibson, T. S.; Mugford, D. C.  
 Megazyme International Ireland Limited, Bray Business Park, Bray, Ire.

SOURCE: Cereal Foods World (1997), 42(6), 476-480  
 CODEN: CFWODA; ISSN: 0146-6283

PUBLISHER: American Association of Cereal Chemists

DOCUMENT TYPE: Journal

LANGUAGE: English

AB A procedure for the quant. anal. of total starch in plant materials has been developed and subjected to a comprehensive interlab. study involving 32 labs., in accordance with the protocol for collaborative studies recommended by American Assocn. of Cereal Chemists and AOAC International. The method involves treatment of a sample at approx. 95.degree. with thermostable .alpha.-amylase to obtain starch depolymn. and solubilization. The slurry is then treated with purified amyloglucosidase to give quant. hydrolysis of the starch fragments to glucose, which is measured with glucose oxidase/peroxidase reagent. Test samples used in the interlab. study included modified and native starches, cereal flours and brans, processed cereal products, animal feeds, and plant material. Results were statistically analyzed according to AOAC International guidelines. The procedure was shown to be highly repeatable (relative std. deviation 2.1-3.9%) and reproducible (relative std. deviation 2.9-5.0%), and on the basis of these results has gained first approval status with AACC (AACC Method 76-13) and approval as AOAC Method 986.11. The method is more robust than a method previously reported (AACC Method 76-12), and 20 samples can be analyzed within 2 h.

IT 9012-54-8, Cellulase

RL: ANT (Analyte); MSC (Miscellaneous); ANST (Analytical study)

Searched by Barb O'Bryen, STIC 308-4291

(assays for starch in cereal products and cellulase contamination)

L155 ANSWER 22 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1997:384636 CAPLUS  
DOCUMENT NUMBER: 127:64687  
TITLE: Speciation and nutrition: enzymological approach  
AUTHOR(S): Hocquellet, P.  
CORPORATE SOURCE: Laboratoire d'Hygiene et de Sante, Institut Europeen  
de l'environnement de Bordeaux, Bordeaux, 33300, Fr.  
SOURCE: Analisis (1997), 25(2), M25-M27  
CODEN: ANLSCY; ISSN: 0365-4877  
PUBLISHER: Elsevier  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: French  
AB A review with 9 refs. Detns. of many mineral nutrients by purely  
instrumental anal. techniques may yield summary (total) values  
disregarding possible multitude of chem. forms contg. the nutrient in  
question. The data then may deviate from the results of in vivo  
nutritional studies since the gastrointestinal environment and functions  
may differentiate among various chem. forms of the same nutrient. To  
improve the value of anal. results, it is recommended to include enzyme  
specificity into the anal. procedures to exploit their substrate  
selectivity. Anal. isolation techniques can then better differentiate  
among various mineral nutrient forms present in the feed and food samples.

L155 ANSWER 23 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1998:273189 CAPLUS  
DOCUMENT NUMBER: 129:80726  
TITLE: Method of analysis for feed enzymes: methodological  
problems?  
AUTHOR(S): Sabatier, Alain M.; Fish, Neville M.  
CORPORATE SOURCE: Rhone-Poulenc Animal Nutrition, Antony, 92164, Fr.  
SOURCE: Journal of Applied Poultry Research (1996), 5(4),  
408-413  
CODEN: JAPRFS; ISSN: 1056-6171  
PUBLISHER: Applied Poultry Science, Inc.  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: English  
AB A review (discussion) with no bibliog. refs. Enzyme products currently on  
the market used as processing aids to enhance feed raw materials have the  
effect of breaking down macromols. such as hemicellulose, or proteins.  
Since enzyme users must know the activity of the enzyme product in order  
for them to rationally formulate their diets, it is necessary to assay  
enzymes in the feed. Several measurement methods exist for the anal. of  
enzymes in feed. Are there methodol. problems in measuring enzyme  
activity that could restrict their utilization. Could the choice of an  
enzyme for a specific application be based on the no. of units of enzyme  
activity. In order to answer these questions, the authors clarified what  
an enzyme is and how its activity is measured: (1) enzymes function only  
through their catalytic action and an enzyme is specific for a substrate  
and catalyzes a specific reaction under defined conditions, (2) enzyme  
activity is measured by different methods, for which substrate quality is  
of the utmost importance, (3) there is a defined method for each product  
as a function of its origin and we have to adapt the method of anal. to  
each feed.

L155 ANSWER 24 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1996:125424 CAPLUS  
DOCUMENT NUMBER: 124:230267  
TITLE: Analysis of enzymes in fodders - a location finding  
AUTHOR(S): Grassmann, Von Eberhard  
CORPORATE SOURCE: Freising, Germany  
SOURCE: Kraftfutter (1996), (1), 27-8, 30

PUBLISHER: CODEN: KFFUAS; ISSN: 0023-4427  
Verlag Alfred Strothe  
DOCUMENT TYPE: Journal; General Review  
LANGUAGE: German  
AB A review with no listed refs. on the kinetics of enzyme reactions, definition of enzyme activity, and detn. of enzyme activities in foods and feeds.

L155 ANSWER 25 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1995:380435 CAPLUS  
DOCUMENT NUMBER: 122:127538  
TITLE: Immunochemical method for determination of exogenous enzymes in substrates and differentiation of exogenous from endogenous enzymes  
Hengerer, Bastian  
INVENTOR(S): ECO SYS Chemische Analysen GmbH, Germany  
PATENT ASSIGNEE(S): Eur. Pat. Appl., 9 pp.  
SOURCE: CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.                        | KIND | DATE     | APPLICATION NO. | DATE     |
|-----------------------------------|------|----------|-----------------|----------|
| EP 636884                         | A1   | 19950201 | EP 1994-110195  | 19940630 |
| R: BE, CH, DE, DK, FR, GB, LI, NL |      |          |                 |          |
| DE 4323959                        | A1   | 19950216 | DE 1993-4323959 | 19930716 |
| DE 4323959                        | C2   | 19950622 |                 |          |

PRIORITY APPLN. INFO.: DE 1993-4323959 19930716

AB The amt. and activity of an exogenously added enzyme in a bioindustrial process (e.g. in the food or feed industry) are monitored, and exogenous and endogenous enzymes are differentiated, by use of antibodies to determinants which differ between the exogenous and endogenous enzymes. Thus, cellulase activity was detd. in com. Roxazym (mixt. of cellulases and glucanases) added to chicken feed. A polyclonal antiserum to Roxazym coupled to magnetic particle-bound goat anti-mouse IgG was mixed with a buffered homogenate of a feed sample, the particles were isolated with a magnet and washed, and the activity of the enzyme on CM-cellulose was detd. by measuring the glucose released with a com. kit.

IT 9012-54-8, Cellulase 9015-78-5, Glucanase  
37278-89-0, Xylanase  
RL: ANT (Analyte); ANST (Analytical study)  
(immunochem. method for detn. of exogenous enzymes in substrates and differentiation of exogenous from endogenous enzymes)

L155 ANSWER 26 OF 28 CAPLUS COPYRIGHT 2003 ACS  
ACCESSION NUMBER: 1996:36835 CAPLUS  
DOCUMENT NUMBER: 124:173761  
TITLE: In-feed assay of enzymes by radial enzyme diffusion - recent developments and application to analysis in pelleted feed  
Walsh, Gary  
AUTHOR(S): Dep. Ind. Biochem., Univ. Limerick, Ire.  
CORPORATE SOURCE: Biotechnology in the Feed Industry, Proceedings of Alltech's Annual Symposium, 11th, Lexington, Ky., May 8-10, 1995 (1995), 331-6. Editor(s): Lyons, T. P.; Jacques, Kathryn Ann. Nottingham University Press: Nottingham, UK.  
SOURCE: CODEN: 62FEAP  
DOCUMENT TYPE: Conference  
LANGUAGE: English  
AB Cellulase (CM-cellulose substrate) and proteinase (gelatin substrate) were

detd. in feed by radial enzyme diffusion assay. The assay method was sufficiently sensitive to detect enzyme prepns. at concns. below normal inclusion levels in feed. Cellulase, fungal amylase, and pentosanase can be **pelleted** at temps. .ltoreq.80.degree. (bacterial amylase .ltoreq.90.degree.) without substantial loss in activity.

IT 9012-54-8, Cellulase

RL: **ANT (Analyte)**; BPR (Biological process); BSU (Biological study, unclassified); ANST (Analytical study); BIOL (Biological study); PROC (Process)

(detn. in feed by radial diffusion assay)

L155 ANSWER 27 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:192683 CAPLUS

DOCUMENT NUMBER: 116:192683

TITLE: Determination of enzymes in feed

AUTHOR(S): Ranfft, K.

CORPORATE SOURCE: Freising, D-8050, Germany

SOURCE: VDLUFA-Schriftenreihe (1991), 33(Umweltaspekte Tierprod.), 513-19

CODEN: VDSCEE; ISSN: 0173-8712

DOCUMENT TYPE: Journal; General Review

LANGUAGE: German

AB A review with 4 refs. (no bibliog.) on the detn. of the catalytic activity of enzymes in feed. The detn. of protease with azocasein substrate and the detn. of phytase by measuring the phosphate formed with Na phytate are described.

L155 ANSWER 28 OF 28 CAPLUS COPYRIGHT 2003 ACS

ACCESSION NUMBER: 1992:5362 CAPLUS

DOCUMENT NUMBER: 116:5362

TITLE: Assay of very low cellulolytic activity in fodder supplemented with enzyme preparation

AUTHOR(S): Burianova, T.; Kopečný, J.; Sajdok, J.; Kas, J.

CORPORATE SOURCE: Dep. Biochem. Microbiol., Inst. Chem. Technol., Prague, 166 28, Czech.

SOURCE: Animal Feed Science and Technology (1991), 33(1-2), 41-8

CODEN: AFSTDH; ISSN: 0377-8401

DOCUMENT TYPE: Journal

LANGUAGE: English

AB The assay of cellulolytic activity in cases where cellulase is added to com. fodder mixts. requires a very sensitive method owing to the very low levels of activity present. A very simple plate method with Congo Red for the detection of hydrolyzed CM-cellulose (CMC), was optimized and the detection limit of 0.5 unit/g (one unit corresponds to 1 mg of reducing sugars released from CMC during 30 min of reaction at pH 5.5 and 40.degree.) was achieved. The method was standardized to the common CMC method evaluated on the basis of the detn. of reducing sugars by the Somogyi-Nelson procedure.

IT 9012-54-8, Cellulase

RL: **ANT (Analyte)**; ANST (Analytical study)  
(detn. of, in fodder)

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